2020 Dicamba Incident Report, Nelms, Mason Co.

Daily maximum temperatures (see following page) at Lincoln, IL from June 1 to June 26 revealed:

1. Many days exceeded the temperature threshold of 85 degrees on the 24-C supplemental label for OTT dicamba in Illinois. Any spraying occurring on these days would have been label misuses.
2. Every day in June, temperatures were high enough to be conducive for volatilization of OTT dicamba.

Included below the Lincoln temperature data are two graphs representing research on dicamba volatility showing significant levels of volatility occurring at temperatures above 77 degrees. (sources: Factors influencing dicamba volatility, https://crops.extension.iastate.edu/blog/bob-hartzler/factors-influencing-dicamba-volatility and Dicamba: What does the research say? https://crops.extension.iastate.edu/blog/bob-hartzler/dicamba-what-does-research-say)

The next page is a screen shot of data from the Cli-Mate website summarizing mean wind speeds from the Lincoln, IL station from June 1 to June 26, 2020 during the daylight hours from 8 a.m. to 7 p.m. when herbicide spraying was most likely to occur. The table below the Wind Rose shows that 36% of the total time the mean wind speed was 8 mph or higher, which implies that winds were very likely gusting over the 10 mph label limit. And nearly 18% of the hours registered calm winds of less than 3 mph, representing times when label violations might have also occurred.

I could not identify any applications involving misuse of dicamba near my property that might have caused the distortions of leaf growth documented in the photos included in my complaint. Extendiflex seed beans are planted on the north, east and south sides of our land. But POE herbicides were not applied on this field until June 26 and *did not include* OTT dicamba. A burn down application did occur on this field about May 27 - 28 but this also did not include any plant growth regulator herbicides. The symptoms here were likely caused by volatilization from many sources, near and far.

The first symptoms of leaf cupping on my non-dicamba resistant soybeans were observed on June 20. The dicamba resistant beans I had planted showed the newly emerging trifoliate leaves appearing healthy and normal. Photos also show the healthy pre-exposure status and the dicamba-deformed, post-exposure status on sycamore, cup plant and rosinweed.

2020 is the fourth consecutive year dicamba has damaged plants on our property. These are unreasonable and unacceptable trespasses of volatile, toxic herbicides that should never have been registered by EPA and approved for use in Illinois by IDOA. Illinois 24-C supplemental label with the cutoff date of June 25 and the temperature cutoff of 85 degrees has proven to be ineffective in reducing impacts of volatilization of very faulty products. Please include my complaint in your dicamba totals for 2020.

Louis R. Nelms Jr.
PII

2020 Dicamba Incident Report, Nelms, Mason Co.

Maximum Air Temperatures, Lincoln, IL, June 1 - June 26, 2020

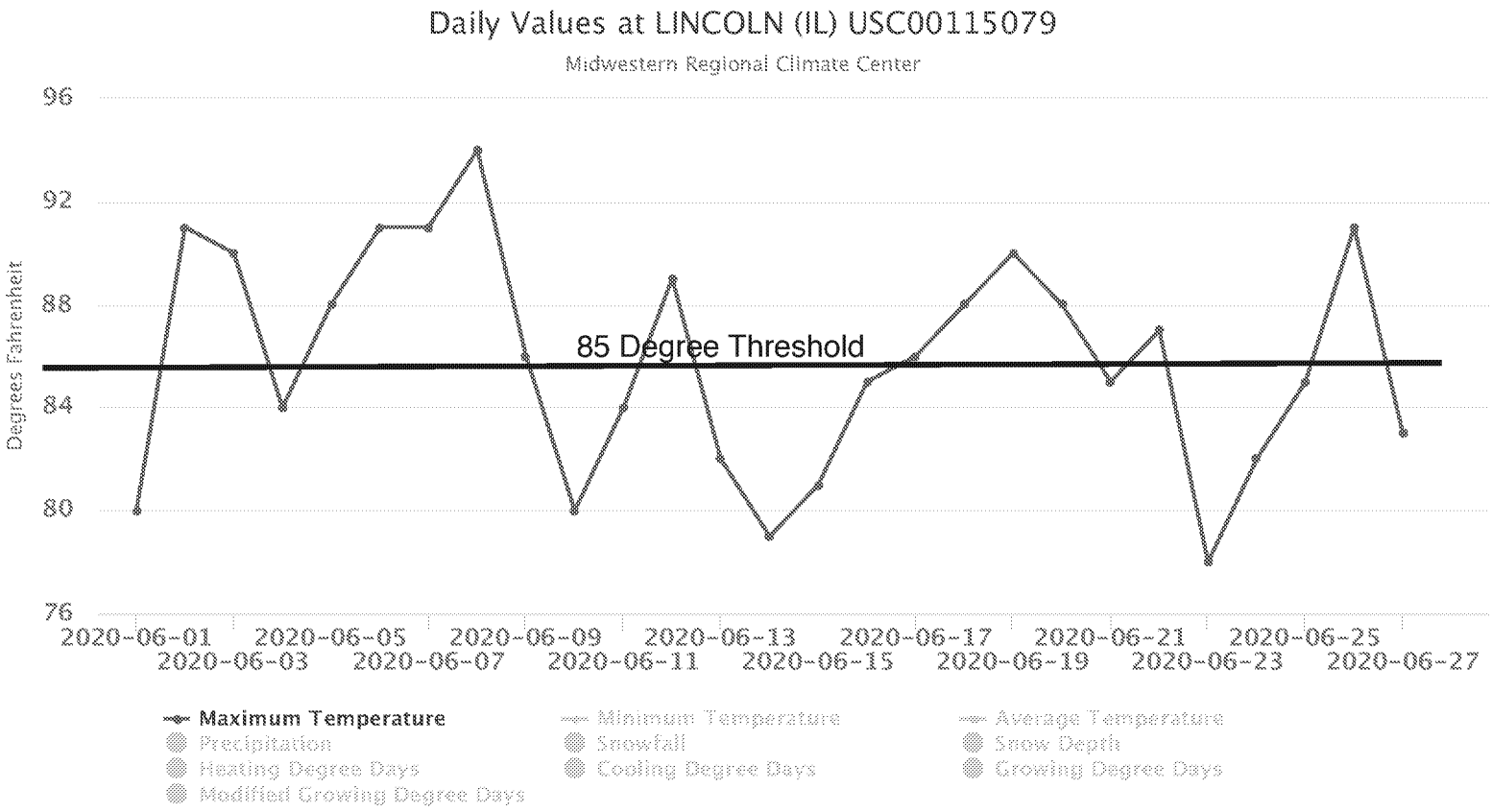


Table 4. Effect of temperature on volatilization to soybean during six hours of exposure in greenhouse

Temperature					
59	68	77	86	95	104
% soybean injury					
3	15	32	40	32	35

Source: Behrens, R. and W.E. Lueschen. 1979. Dicamba volatility. Weed Science Journal 27:486-493.

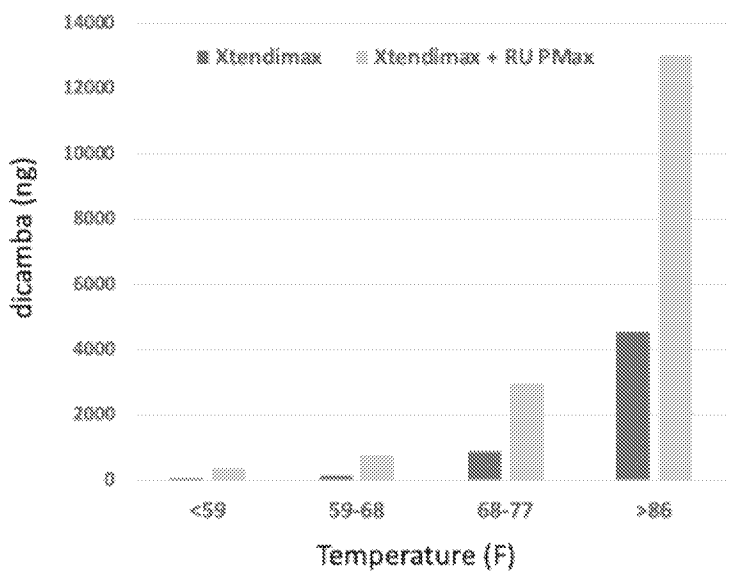
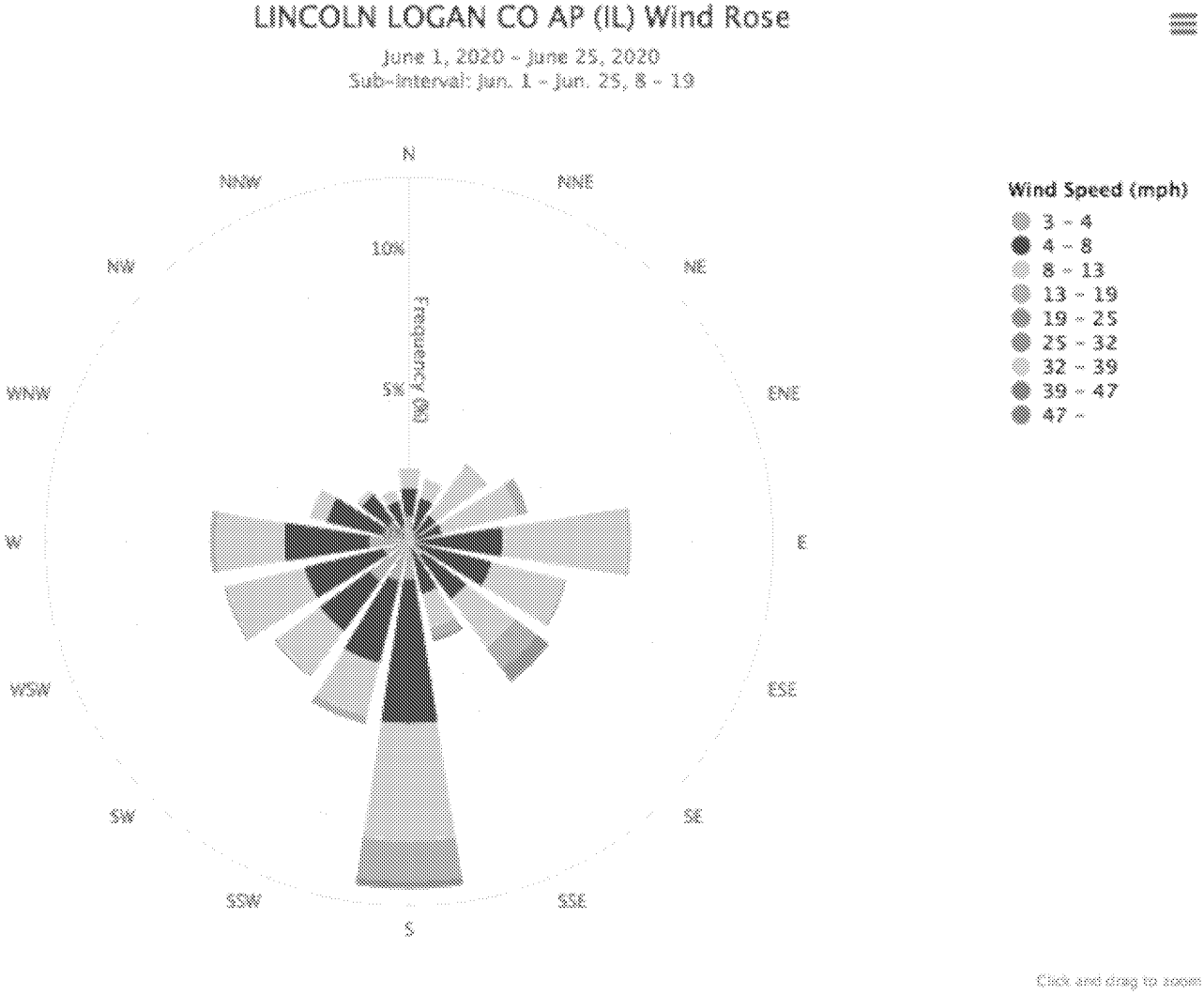


Figure 1. Influence of temperature and mixing with glyphosate on vapor losses from soil surface (greenhouse). Mueller and Steckel.

2020 Dicamba Incident Report, Nelms, Mason Co.



LINCOLN LOGAN CO AP (IL) ~ Wind Frequency Table (percentage)

Latitude : 40.1583
Longitude : -89.3347
Elevation : 597 ft.
Element : Mean Wind Speed

Start Date : June 1, 2020
End Date : June 25, 2020
# of Days : 25 of 25
obs : poss : 901 of 1800

Sub Interval Windows

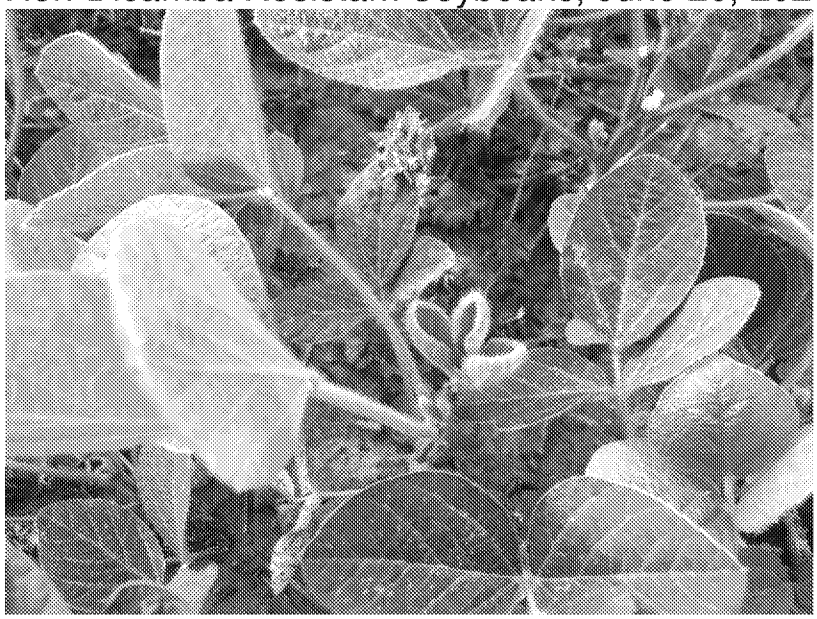
	Start	End
Date	Jun. 1	Jun. 25
Hour	8	19

(Greater than or equal to initial interval value and Less than ending interval value.)

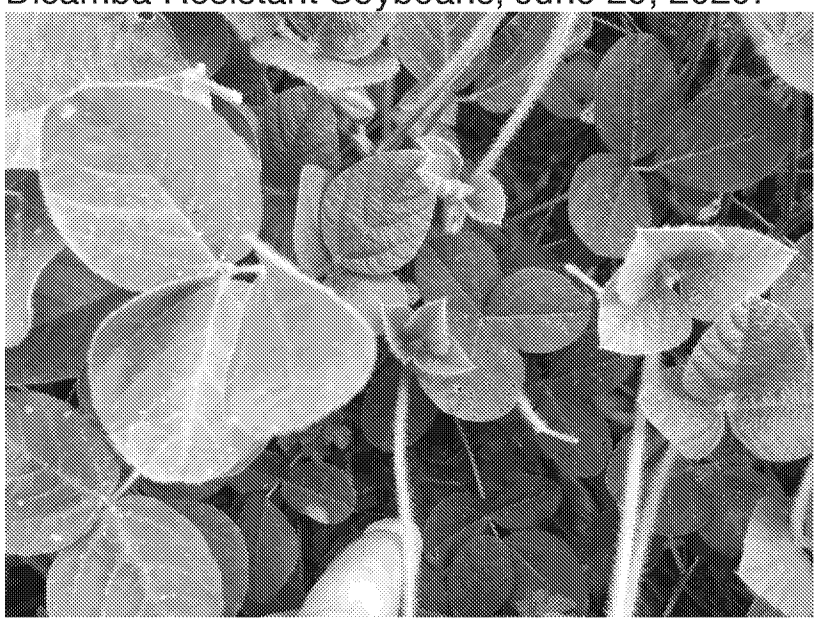
Range (mph)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
3 - 4	0.9	0.4	0.2	0.2	0.3	0.2	0.6	0.2	1.3	1.4	1.7	0.9	1.4	0.9	0.9	0.6	12.2
4 - 8	1.0	1.2	1.0	1.0	3.0	2.8	1.9	1.7	5.1	3.0	2.2	2.9	3.0	2.1	1.2	0.9	34.0
8 - 13	0.7	0.7	2.1	2.7	4.4	2.6	2.1	1.2	4.1	1.9	1.9	2.8	2.4	0.6	0.2	0.4	30.7
13 - 19	0.0	0.0	0.1	0.4	0.1	0.1	0.9	0.3	1.4	0.3	0.1	0.1	0.2	0.0	0.0	0.0	4.2
19 - 25	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25 - 32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
32 - 39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 - 47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 -	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total(%)	2.6	2.3	3.4	4.3	7.9	5.7	6.0	3.7	12.3	6.7	5.9	6.7	7.1	3.6	2.3	1.9	82.2
Calm (<3)																	17.7
Ave Speed	5.7	6.6	8.5	9.1	8.2	7.6	10.5	8.9	8.6	6.7	6.2	7.2	6.7	5.8	5.0	5.9	6.3

2020 Dicamba Incident Report, Nelms, Mason Co.

Non-Dicamba Resistant Soybeans, June 20, 2020



Dicamba Resistant Soybeans, June 20, 2020:



2020 Dicamba Incident Report, Nelms, Mason Co.

Soybeans, July 2, 2020

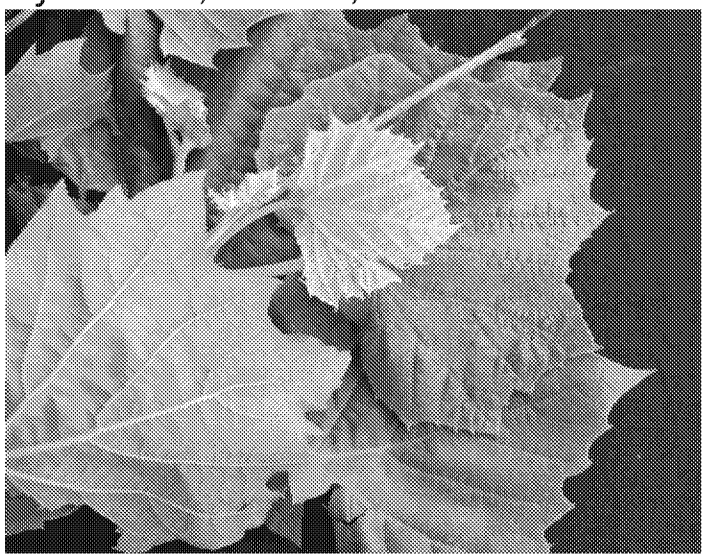
Non-Resistant

Dicamba Resistant

2020 Dicamba Incident Report, Nelms, Mason Co.

,

Sycamore, June 6, 2020



Sycamore, June 24, 2020

Sycamores are a primary indicator species for dicamba volatility from OTT applications on dicamba soybeans, from near and far. Every year from 2017 on, sycamores have conspicuously revealed the drift of dicamba by their tell tale cupping of newly emerged leaves following dicamba exposure.

Plant growth regulator herbicides like dicamba translocate to and deform newly emerging leaves of sycamore. Due to their indeterminate growth habit sycamores continue to develop and form new leaves during the OTT dicamba application season. This, plus the fact they are very sensitive to dicamba exposure, make them the perfect bellwethers for detecting off-target drift of dicamba.

The first photo of June 6 shows the pre-exposure health of leaves. A steady progression of symptom development occurred starting near the timing of the first symptoms observed on non-dicamba resistant soybeans. In previous years, the symptoms grew progressively worse long after the final spraying of dicamba.

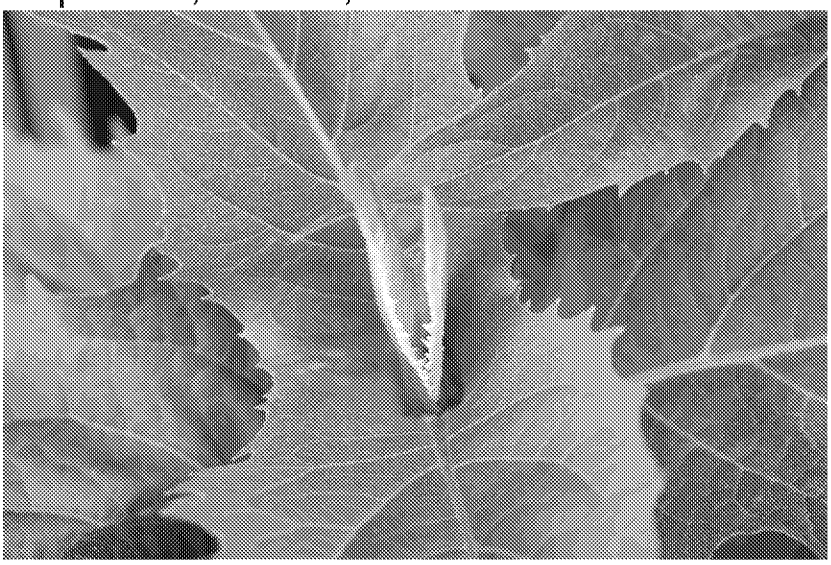
2020 Dicamba Incident Report, Nelms, Mason Co.

Sycamore, June 28, 2020

Sycamore, July 1, 2020

2020 Dicamba Incident Report, Nelms, Mason Co.

Cup Plant, June 6, 2020



Cup Plant, a common native forb is one of the Silphium species showing high sensitivity to dicamba.

On June 6, Cup Plant leaves were developing and growing normally.

By the end of June, gross distortions of the most newly developing leaves were much evident on nearly every Cup Plant growing on our 13 acres.

This has been an every year event since 2017.

Cup Plant is another canary in the dicamba fields.

Cup Plant, July 1, 2020

2020 Dicamba Incident Report, Nelms, Mason Co.

Rosinweed, June 6, 2020

Rosinweed, Silphium integrifolium, is another go-to for indicating off-target effects of plant growth regulator herbicide applications. Early season burn-down applications hit it at a more sensitive stage, causing more severe distortion of stem and leaf growth.

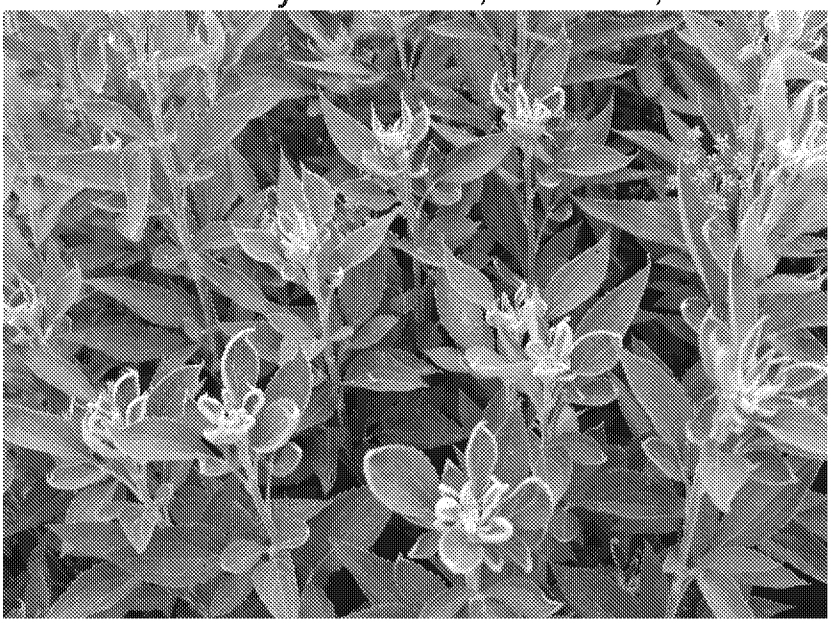
Later OTT applications of dicamba on soybeans cause less severe but still quite recognizable symptoms including upward cupping and yellowing.

Rosinweed, July 1, 2020

The photos show healthy leaf growth in early June and the cupping of leaves on July 1.

2020 Dicamba Incident Report, Nelms, Mason Co.

Sweet Black-eyed Susan, June 27, 2020



I have seen this severe upward cupping of Sweet Black-Eyed Susan every summer from 2017 following OTT dicamba applications on soybeans.